

26. (New) The isolated nucleic acid of claim 25 wherein the sequence of the dipeptidylpeptidase comprises residues 543 to 712 of SEQ ID NO:2.
27. (New) The isolated nucleic acid of claim 26 wherein the sequence of the dipeptidylpeptidase comprises residues 540 to 712 of SEQ ID NO:2.
28. (New) The isolated nucleic acid of claim 27 wherein the sequence of the dipeptidylpeptidase comprises residues 522 to 712 of SEQ ID NO:2.
29. (New) An isolated nucleic acid that encodes a dipeptidylpeptidase having amidolytic activity for cleavage of a peptide bond between the second and third amino acids from the N-terminal end of a target polypeptide, wherein the target polypeptide has an aliphatic or an aromatic residue as a substituent on the  $\alpha$ -carbon atom of the second amino acid from the N-terminal end of the polypeptide, and wherein the dipeptidylpeptidase comprises an amino acid sequence comprising a catalytic domain comprising TGGNSGSPVF (SEQ ID NO:25) and having a percentage amino acid identity of greater than 40% with SEQ ID NO:2 with the TGGNSGSPVF residues of the catalytic domain of the dipeptidylpeptidase in register with residues 644-653 of SEQ ID NO:2.
30. (New) The nucleic acid of claim 29 wherein the dipeptidylpeptidase comprises an amino acid sequence comprising a catalytic domain comprising TGGNSGSPVF (SEQ ID NO:25) and having a percentage amino acid identity of greater than 50% with SEQ ID NO:2 with the TGGNSGSPVF residues of the catalytic domain of the dipeptidylpeptidase in register with residues 644-653 of SEQ ID NO:2.
31. (New) The nucleic acid of claim 30 wherein the dipeptidylpeptidase comprises an amino acid sequence comprising a catalytic domain comprising TGGNSGSPVF (SEQ ID NO:25) and having a percentage amino acid identity of greater than 60% with SEQ ID

NO:2 with the TGGNSGSPVF residues of the catalytic domain of the dipeptidylpeptidase in register with residues 644-653 of SEQ ID NO:2.

32. (New) The nucleic acid of claim 31 wherein the dipeptidylpeptidase comprises an amino acid sequence comprising a catalytic domain comprising TGGNSGSPVF (SEQ ID NO:25) and having a percentage amino acid identity of greater than 70% with SEQ ID NO:2 with the TGGNSGSPVF residues of the catalytic domain of the dipeptidylpeptidase in register with residues 644-653 of SEQ ID NO:2.
33. (New) The nucleic acid of claim 32 wherein the dipeptidylpeptidase comprises an amino acid sequence comprising a catalytic domain comprising TGGNSGSPVF (SEQ ID NO:25) and having a percentage amino acid identity of greater than 80% with SEQ ID NO:2 with the TGGNSGSPVF residues of the catalytic domain of the dipeptidylpeptidase in register with residues 644-653 of SEQ ID NO:2.
34. (New) The nucleic acid of claim 33 wherein the dipeptidylpeptidase comprises an amino acid sequence comprising a catalytic domain comprising TGGNSGSPVF (SEQ ID NO:25) and having a percentage amino acid identity of greater than 90% with SEQ ID NO:2 with the TGGNSGSPVF residues of the catalytic domain of the dipeptidylpeptidase in register with residues 644-653 of SEQ ID NO:2.
35. (New) An isolated nucleic acid that encodes a dipeptidylpeptidase having amidolytic activity for cleavage of a peptide bond between the second and third amino acids from the N-terminal end of a target polypeptide, wherein the target polypeptide has an aliphatic or an aromatic residue as a substituent on the  $\alpha$ -carbon atom of the second amino acid from the N-terminal end of the polypeptide, and wherein the nucleic acid comprises a nucleotide sequence having at least about 70% identity with SEQ ID NO:1.

**Preliminary Amendment**

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36. (New) The isolated nucleic acid of claim 35, wherein the nucleotide sequence has at least about 80% identity with SEQ ID NO:1.

37. (New) The isolated nucleic acid of claim 36, wherein the nucleotide sequence has at least about 90% identity with SEQ ID NO:1.

38. (New) The isolated nucleic acid of claim 37, wherein the nucleotide sequence has at least about 95% identity with SEQ ID NO:1.

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